

REMARKS/ARGUMENT

By this Amendment, claims 19-27 have been cancelled and new claims 28-34 have been added. Accordingly, claims 1-18 and 28-34 are pending in the present application. Of these pending claims, claims 1-18 have been withdrawn from consideration.

Claims 19, 23 and 26 stand rejected under 35 USC §102(b) being anticipated by JP 07-179832. Claims 19, 20, 21 and 26 stand rejected under 35 USC §102(b) as being anticipated by Gilleo (EP 265077). Claims 19-22 and 25-27 stand rejected under 35 USC §102(b) as being anticipated by Gaynes et al. (US Patent 5,542,602). Claims 23-24 stand rejected under 35 USC §103(a) as being unpatentable over Gaynes et al. in view of JP 07-179832. Applicant respectfully traverses these rejections as applied to new claims 28-34.

Among limitations of independent claim 28 which are neither disclosed nor suggested in the prior art of record is a bonded structure which includes “a first low-melting-point material formed on the first electrode” and “an organic binder formed on the first low-melting-point material”, wherein the organic binder includes a conductive filler and “at least a part of the conductive filler is present within the first low-melting-point material”. With this structure, since the conductive filler contained in the organic binder is also present within the low-melting-point material on the electrode, the contact area between the low-melting-point material and the conductor filler is increased. As a result, the bonding strength is enhanced and conduction resistance is decreased.

JP 07-179832 neither discloses nor suggests such a bonded structure. JP 07-179832 is directed to a conductive adhesive wherein a conductive filler comprising a conductive material and a conductive metal layer which covers the whole surface of the material is placed within an organic binder. The conductive metal layer is used to connect between fillers and between the electrodes. There’s nothing within JP 07-179832 which teaches, or even remotely suggests, that the conductive filler is present within a low-melting-point material formed on an electrode.

Gilleo is directed to an anisotropic adhesive for bonding electrical components. The particle 36 corresponding to the filler in Gilleo is a fusible, electrically conductive particle which is dispersed uniformly throughout a thermoplastic resin. When heat is applied to soften the thermoplastic resin, the exposed electrically conductive particles position themselves between opposed terminals and form a conductive mechanical bond. Thus, the particles 36 simply contact opposed electrodes and are not present within a low-melting-point material on a surface of an electrode as required by independent claim 28. There is nothing within Gilleo which teaches or even remotely suggests such a structure.

Gaynes et al. does not remedy any deficiencies of JP 07-179832 or Gilleo. Gaynes et al. is merely directed to a transient liquid phase (TLP) reaction at a low temperature. There is nothing within this reference which teaches, or even remotely suggests, that a conductive filler within an organic binder is present within a low-melting-point material formed on a surface of an electrode.

Therefore, even if one were to combine the teachings of the cited references, one would not arrive at the present invention as defined in independent claim 28. At best, since each of the references teach that the conductive filler remains suspended within the organic binder, any resulting structure from the combined teachings of these references would also have the conductive filler suspended within the organic binder and not present within a low-melting-point material formed on the surface of an electrode. Accordingly, it is respectfully submitted that independent claim 28 patentably distinguishes over the art of record.

Claims 29-34 depend either directly or indirectly from independent claim 28 and include all the limitations found therein. Each of the dependent claims include additional limitations which, in combination with the limitations of the claims from which they depend, are neither disclosed nor suggested in the prior art of record. Accordingly, claims 29-34 are likewise patentable.

In view of the foregoing, favorable consideration of new claims 28-34, and allowance of the present application with claims 28-34 is respectfully and earnestly solicited.

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Respectfully submitted,

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